	(FILE 'HOME' ENTERED AT 16:07:12 ON 13 AUG 2003)
L10	
L14	FILE 'CAPLUS' ENTERED AT 16:09:44 ON 13 AUG 2003 1 S L13
L15	FILE 'REGISTRY' ENTERED AT 16:11:02 ON 13 AUG 2003 1 S L4 AND L8
L16 L17 L18 L19 L20	909886 S POLYMER
L21 L22 L23	FILE 'USPATFULL' ENTERED AT 16:18:57 ON 13 AUG 2003 74 S L20 63469 S PHOTORESIST OR RESIST COMPOSITION 2 S L21 AND L22
L24 L25 L26 L27 L28 L29 L30 L31 L32 L33 L34 L35 L36 L37	QUE L25 AND L24 SCREEN 970 AND 1015 AND 2067 STRUCTURE UPLOADED QUE L28 AND L27 SCREEN 970 AND 1015 AND 2067 STRUCTURE UPLOADED QUE L31 AND L30 10 S L26 FULL 8 S L29 FULL 8 S L32 FULL SCREEN 970 AND 1015 AND 2067 STRUCTURE UPLOADED QUE L37 AND L36
L39 L40 L41 L42 L43 L44 L45	SCREEN 970 AND 1015 AND 2067 STRUCTURE UPLOADED QUE L40 AND L39 SCREEN 970 AND 1015 AND 2067 STRUCTURE UPLOADED QUE L43 AND L42 53 S L38 FULL

FILE 'USPATFULL' ENTERED AT 16:26:36 ON 13 AUG 2003

6 S L41 FULL

25 S L44 FULL

0 S L34 NOT L35

L46 L47

L48

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L49
              4 S L33
L50
              5 S L34
L51
             81 S L45
             3 S L46
L52
             11 S L47
L53
              2 S L22 AND (L49 OR L50 OR L51 OR L52 OR L53)
L54
     FILE 'CAPLUS' ENTERED AT 16:28:16 ON 13 AUG 2003
             14 S L33
L55
             22 S L34
L56
            192 S L45 OR L46 OR L47
L57
            210 S L57 OR L55 OR L56
L58
              2 S L17 AND L58
L59
     FILE 'USPATFULL' ENTERED AT 16:30:28 ON 13 AUG 2003
          74523 S PHOTOSENSITIVE
L60
L61
              3 S L60 AND L51
=> d 153 1-11 bib ab hitstr
     ANSWER 1 OF 11 USPATFULL on STN
ΑN
       2002:262131 USPATFULL
ΤI
       Agricultural covering material
IN
       Ichikuni, Naomi, Kanagawa, JAPAN
       Ishida, Toru, Kanagawa, JAPAN
       Kaya, Seitoku, Kanagawa, JAPAN
       Funaki, Atsushi, Kanagawa, JAPAN
       Takakura, Teruo, Kanagawa, JAPAN
       Asahi Glass Company Limited, Tokyo, JAPAN (non-U.S. corporation)
PA
ΡI
       US 6461719
                          B1
                               20021008
       WO 9967333 19991229
       US 2000-720240
AΙ
                               20001222 (9)
       WO 1999-JP3342
                               19990623
                               20001222 PCT 371 date
PRAI
       JP 1998-176320
                           19980623
       JP 1998-176321
                           19980623
       JP 1998-180886
                           19980626
       JP 1998-180887
                           19980626
       JP 1998-182781
                           19980629
       JP 1998-182782
                           19980629
DT
       Utility
FS
       GRANTED
      Primary Examiner: Acquah, Samuel A.
EXNAM
LREP
       Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN
       Number of Claims: 23
ECL
       Exemplary Claim: 1
       0 Drawing Figure(s); 0 Drawing Page(s)
DRWN
LN.CNT 1644
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       An agricultural covering material made of a fluorine-containing polymer
AB
       film having a dynamic viscoelastic modulus of from 1 to 70 kg/mm.sup.2,
       a tensile strength of from 1.5 to 5.0 kg/mm.sup.2, a specific gravity of
       from 1.0 to 2.0 and a contact angle with water of at most 106.degree..
TТ
    69288-57-9P, Ethylene-(perfluorohexyl)ethylene-
      tetrafluoroethylene copolymer
        (for prepg. agricultural covering materials with excellent flexibility,
        durability, dust protection, and light transmittance)
RN
     69288-57-9 USPATFULL
CN
     1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, polymer with ethene
       and tetrafluoroethene (9CI) (CA INDEX NAME)
```

\

L14 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:58673 CAPLUS

DN 138:115067

TI Chemical amplification photoresist monomers, polymers therefrom and photoresist compositions containing the same

IN Jung, Jae Chang; Lee, Geun Su; Shin, Ki Soo

PA S. Korea

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003017404	A1	20030123	US 2002-54095	20020122
PRAI	KR 2001-38030	Α	20010629		

OS MARPAT 138:115067

The present invention relates to a chem. amplification photoresist monomer, a photoresist polymer prepd. from it, and a photoresist compn. using the polymer. More specifically, a chem. amplification photoresist polymer comprises a fluorine-contg. monomer R1R3C=CR2R4 (R1-4 = H, halogen-substituted alkyl). The photoresist compn. has excellent etching resistance, heat resistance and adhesiveness, and is developable in aq. tetramethylammonium hydroxide (TMAH) soln. As the compn. has low light absorbance at 193 nm and 157 nm wavelength, it is very useful for forming ultramicro pattern in the process using a light source of far UV, esp. of VUV (157 nm).

IT 488722-50-5P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (chem. amplification photoresist monomers, polymers for photoresist compns.)

RN 488722-50-5 CAPLUS

CN 2H-Isoindole-2-carboxylic acid, 1,3,3a,4,7,7a-hexahydro-1,3-dioxo-, 1,1-dimethylethyl ester, polymer with 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene and 3a,4,7,7a-tetrahydro-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM· 1

CRN 488722-49-2 CMF C13 H17 N O4

CM 2

CRN 19430-93-4 CMF C6 H3 F9

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CRN 85-40-5 CMF C8 H9 N O2

=>

```
L18
    ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
     2003:42889 CAPLUS
AN
DN
     138:115057
     Maleimide-photoresist monomers containing halogen for
ΤI
     photoresist compositions
     Lee, Geun Su; Jung, Jae Chang; Jung, Min Ho; Koh, Cha Won; Shin, Ki Soo
IN
PA
     S. Korea
     U.S. Pat. Appl. Publ., 19 pp.
so
     CODEN: USXXCO
DT
     Patent
     English
LA
FAN.CNT 1
     PATENT NO.
                      KIND
                           DATE
                                           APPLICATION NO. DATE
     ______
                      ----
                           _____
                                           _____
                                                           _____
     US 2003013037
                            20030116
                                           US 2002-80335
                                                            20020221
PΙ
                      Α1
                            20030124
                                           JP 2002-109507
                                                            20020411
     JP 2003020315
                      A2
PRAI KR 2001-19815
                      Α
                            20010413
                            20010413
     KR 2001-19816
                      Α
os
     MARPAT 138:115057
     Photoresist monomers, photoresist polymers prepd. of
AB
     it, and photoresist compns. using the polymer are disclosed.
     More specifically, photoresist polymers comprising maleimide
     monomer represented by formula I (X1,2 = H, CF3, halogen; R1-3 = H, F,
     CF3, OH; C1-10 alkyl, perfluoroalkyl, alkoxy) and a compn. comprising the
     polymer of it are disclosed. The photoresist compn. has
     excellent etching resistance, heat resistance and adhesiveness, and can be
     developed in an aq. tetramethylammonium hydroxide (TMAH) soln. As the
     compn. has low light absorbance at 193 nm and 157 nm wavelength, and it is
     suitable for a process using UV light source such as VUV (157 nm).
IT
     485804-88-4P
     RL: SPN (Synthetic preparation); TEM (Technical or engineered material
     use); PREP (Preparation); USES (Uses)
        (maleimide-photoresist monomers contg. halogen for
       photoresist compns.)
     485804-88-4 CAPLUS
RN
CN
     Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,
     polymer with 1-(heptadecafluorooctyl)-1H-pyrrole-2,5-dione and
     3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
         172413-96-6
     CMF C12 H2 F17 N O2
    (CF_2)_7 - CF_3
```

CRN 154970-45-3 CMF C12 H18 O2

CRN 19430-93-4 CMF C6 H3 F9

$$_{\rm H_2C} = _{\rm CH^- (CF_2)_3 - CF_3}$$

=>

Make division that we

L20 ANSWER 81 OF 81 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1979:188670 CAPLUS

DN 90:188670

TI Copolymers made from tetrafluoroethylene and ethylene

IN Ukihashi, Hiroshi; Yamabe, Masaaki; Miyake, Haruhisa

PA Asahi Glass Co., Ltd., Japan

SO Ger. Offen., 22 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

1111.011 #								
	PATENT NO.	KIND	DATE .	APPLICATION NO.	DATE			
ΡI	DE 2836296	<b>A1</b>	19790301	DE 1978-2836296	19780818			
	DE 2836296	C2·	19830714	•				
	JP 54033583	A2	19790312	JP 1977-98752	19770819			
	JP 59050163	B4	19841206					
PRAI	JP 1977-98752		19770819					

AB Terpolymers which have volumetric melt flow rate 10-500 mm3/s at 300.degree. and 30 kg/cm2 and are useful in heat-resistant coatings and elec. insulation consist of C2F4 (I) 40-60, C2H4 (II) 40-60, and perfluoroalkylvinyl monomers CH2:CHCnF2n+1(n = 2-10) 0.01-10 mol.%. I 1226, II 82, and perfluorobutylethylene (III) 26 g were added to 3.46 kg CCl3F, 6.52 kg C2Cl3F3, and 2.38 g tert-Bu peroxyisobutyrate and polymd. at 65.degree. with addn. of a 53:46.3:0.7 mol. ratio mixt. of I, II, and III to maintain the pressure at 15.0 kg/cm2. After 5 h, 460 g of a white copolymer [68258-85-5] with flow temp. 267.degree., decompn. temp. 360.degree., volumetric melt flow rate 50 mm3/s, tensile strength 55 kg/cm2, and elongation 610% at 200.degree. was obtained. Coatings of the polymer showed no crack formation on stressing at high temp. and had initial deformation (tensile creep test at 175.degree. and 30 kg/cm2) 3.2%. The polymer had heat aging resistance >200 h at 230.degree., and showed no stress cracking in 60% HNO3.

IT 68258-85-5

RL: TEM (Technical or engineered material use); USES (Uses) (coatings, with improved heat resistance and melt flow)

RN 68258-85-5 CAPLUS

CN 1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 19430-93-4 CMF C6 H3 F9

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CM 2

CRN 116-14-3 CMF C2 F4

CRN 74-85-1 CMF C2 H4

 $H_2C = CH_2$ 

=>

```
ANSWER 77 OF 81 CAPLUS COPYRIGHT 2003 ACS on STN
0
AN
     1985:96237 CAPLUS
     102:96237
DN
     Polymer of TFE and F-alkyl ethylene
ΤI
     Fritschel, Scott J.
IN
     du Pont de Nemours, E. I., and Co., USA
PA
     U.S., 6 pp. Cont.-in-part of U.S. Ser. No. 289,493, abandoned.
SO
     CODEN: USXXAM
     Patent
DT
     English
LA
FAN.CNT 2
                      KIND DATE
                                           APPLICATION NO.
                                                           DATE
     PATENT NO.
     ______
                      _ _ _ _
                           _____
                                           ______
                                                           _____
                                          US 1983-507082
                                                            19830623
PI
     US 4487902
                      Α
                            19841211
     BR 8106040
                      Α
                            19820608
                                           BR 1981-6040
                                                            19810922
     BE 890476
                      A1
                           19820324
                                          BE 1981-206047
                                                            19810924
     FR 2490653
                      A1
                           19820326
                                           FR 1981-17996
                                                            19810924
     FR 2490653
                      В1
                           19840323
     GB 2084593
                      Α
                            19820415
                                           GB 1981-28918
                                                            19810924
     NL 8104397
                      Α
                           19820416
                                          NL 1981-4397
                                                            19810924
     JP 57085810
                      A2
                           19820528
                                           JP 1981-149681
                                                            19810924
                       B4
                            19870727
     JP 62034322
                                           CA 1981-386576
                                                            19810924
     CA 1220597
                      Α1
                            19870414
PRAI US 1980-190562
                            19800925
     US 1981-289493
                            19810806
     Copolymn. of 93-99 mol % tetrafluoroethylene (TFE) with 1-7 mol %
AB
     fluoroalkyl derivs. of ethylene gives polymers that provide readily
     processable melts with m.p. lower than that of PTFE melts. Thus, 800 mL
     CH2ClCFCl2 (I) contg. 2 mL perfluorobutylethylene (II) and 0.25 mL MeOH
     was pressurized to 9.1 kg/cm2 with TFE at 60.degree. and mixed with 15 mL
     0.002 g/mL bis(perfluoropropanoyl) peroxide (III) soln. in I. After 4 min
     stirring at 1000 rpm and 60.degree., more III-I soln. was added
     continuously at 1 mL/min, and after an addnl. 4 min a 0.04 g/mL II-I soln.
     was added continuously at 1 mL/min to give, after an addnl. 60 min,
     copolymer [82606-24-4] contg. 2.3 mol % II, with melt viscosity
     27 .times. 104 Pa at 372.degree. and m.p. 303.degree., which provided
     compression-molded films with ultimate tensile strength 4200 psi, yield
     strength 2900 psi, and ultimate elongation 290%.
IT
     82606-24-4P
     RL: PREP (Preparation)
        (manuf. of melt-processable)
RN
     82606-24-4 CAPLUS
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
           (CA INDEX NAME)
     (9CI)
         1
```

CRN 19430-93-4 CMF C6 H3 F9

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CM 2

CRN 116-14-3 CMF C2 F4

```
21 ANSWER 65 OF 74 USPATFULL on STN
AN
       87:8116 USPATFULL
       Tetrafluoroethylene fine powder and preparation thereof
TI
       Malhotra, Satish C., Parkersburg, WV, United States
IN
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
       US 4640955
                                19870203
PΙ
       US 1985-794046
                                19851029 (6)
ΑI
       Division of Ser. No. US 1984-621798, filed on 18 Jun 1984, now patented,
RLI
       Pat. No. US 4576869
DT
       Utility
       Granted
FS
EXNAM
       Primary Examiner: Michl, Paul R.
       Number of Claims: 2
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 524
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Tetrafluoroethylene fine powder resins are described which have
       surprisingly high extrusion pressures and molecular weights which make
       them useful in post-paste extruded stretching operations. The resins are
       made by using a permanganate polymerization initiator and controlling
       its rate of addition.
IT
    82606-24-4P
        (prepn. of powd., for paste extrusion and stretching)
     82606-24-4 USPATFULL
RN
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
              (CA INDEX NAME)
     CM
          1
     CRN
          19430-93-4
     CMF
          C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
          116-14-3
     CMF
          C2 F4
     ANSWER 66 OF 74 USPATFULL on STN
L21
       87:3301 USPATFULL
AN
ΤI
       Tetrafluoroethylene copolymers
       Gangal, Subhash V., Parkersburg, WV, United States
IN
       Malhotra, Satish C., Parkersburg, WV, United States
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
PΤ
       US 4636549
                                19870113
AΤ
       US 1985-739860
                                19850531 (6)
RLI
       Continuation-in-part of Ser. No. US 1984-663466, filed on 18 Oct 1984,
       now abandoned which is a continuation-in-part of Ser. No. US
       1983-489305, filed on 28 Apr 1983, now abandoned which is a
       continuation-in-part of Ser. No. US 1982-449499, filed on 13 Dec 1982,
```

```
now abandoned
DT
       Utility
FS
       Granted
       Primary Examiner: Wong, Jr., Harry
EXNAM
CLMN
       Number of Claims: 1
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 580
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A tetrafluoroethylene copolymer composition in which the modifying
       comonomer is a fluorinated alkyl ethylene of the formula
       CF.sub.3 (CF.sub.2).sub.3 CH.dbd.CH.sub.2,
       wherein the units of acid comonomers are located in the interior of the
       copolymer.
IT
    82606-24-4P
         (prepn. of, as core-shell particles)
RN
     82606-24-4 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
       (9CI)
              (CA INDEX NAME)
     CM
          1
     CRN
          1,9430-93-4
     CMF C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
          116-14-3
     CMF
          C2 F4
    ANSWER 67 OF 74 USPATFULL on STN
L21
AN
       86:71589 USPATFULL
TI
       Heat reflective polymer blends
       Kerbow, Dewey L., Vienna, WV, United States
IN
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
PΙ
       US 4629756
                                19861216
AΙ
       US 1985-794398
                                19851104 (6)
       Utility
DT
FS
       Granted
       Primary Examiner: Lilling, Herbert J.
EXNAM
       Number of Claims: 7
CLMN
       Exemplary Claim: 1
ECL
DRWN
       No Drawings
LN.CNT 195
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB
       A radiant heat reflective composition comprising a blend of a
       tetrafluoroethylene copolymer and copper flake.
    68258-85-5, Ethylene-3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene-
```

tetrafluoroethylene copolymer

```
(copper flake-filled, heat-reflective)
     68258-85-5 USPATFULL
RN
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and
CN
       tetrafluoroethene (9CI) (CA INDEX NAME)
     CM
          1
     CRN 19430-93-4
     CMF C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN 116-14-3
     CMF C2 F4
     CM
     CRN
         74-85-1
     CMF
          C2 H4
H_2C \longrightarrow CH_2
     ANSWER 68 OF 74 USPATFULL on STN
L21
       86:66411 USPATFULL
AN
ΤI
       Curing of thermoplastic tetrafluoroethylene/perfluoroalkyl ethylene
       copolymers
IN
       Fritschel, Scott J., Wilmington, DE, United States
       Saunders, William D., Parkersburg, WV, United States
PA
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
       (U.S. corporation)
PΙ
       US 4624988
                                19861125
AΙ
       US 1985-789758
                                19851021 (6)
       Utility
DT
       Granted
FS
EXNAM Primary Examiner: Lieberman, Allan M.
       Number of Claims: 2
CLMN
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 312
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Crosslinking of copolymers of tetrafluoroethylene and
AB
       perfluoroalkylethylene by heating in the presence of K.sub.2 AF is
       described.
IT 107001-47-8P
        (prepn. of crosslinked, creep-resistant)
RN
     107001-47-8 USPATFULL
CN
     Phenol, 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis-,
       dipotassium salt, polymer with 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene and
       tetrafluoroethene (9CI) (CA INDEX NAME)
```

CRN 25088-69-1

C15 H10 F6 O2 . 2 K

K

CM

CRN 19430-93-4 C6 H3 F9 CMF

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CM 3

CRN 116-14-3 CMF C2 F4

L21 ANSWER 69 OF 74 USPATFULL on STN

AN86:15457 USPATFULL

TI Tetrafluoroethylene fine powder and preparation thereof

Malhotra, Satish C., Parkersburg, WV, United States ΙN

E. I. Du Pont de Nemours and Company, Wilmington, DE, United States PΑ

(U.S. corporation)

PΙ US 4576869

19860318 US 1984-621798 19840618 (6)

DTUtility

FS Granted

Primary Examiner: Wong, Jr., Harry EXNAM

Number of Claims: 3 CLMN

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 536

ΑI

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Tetrafluoroethylene fine powder resins are described which have surprisingly high extrusion pressures and molecular weights which make them useful in post-paste extruded stretching operations. The resins are made by using a permanganate polymerization initiator and controlling its rate of addition so that the reaction slows down at the end of the polymerization.

```
82606-24-4P
        (prepn. of powd., for paste extrusion and stretching)
RN
     82606-24-4 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
             (CA INDEX NAME)
     CM
          1
     CRN
          19430-93-4
     CMF C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
          116-14-3
     CMF C2 F4
L21 ANSWER 70 OF 74 USPATFULL on STN
AN
       85:63696 USPATFULL
ΤI
       Lamination of fluorocarbon films
IN
       Wolfe, Jr., William R., Wilmington, DE, United States
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
PΙ
                               19851029
       US 4549921
       US 1983-546546
                               19831028 (6)
ΑI
DT
       Utility
FS
       Granted
       Primary Examiner: Kimlin, Edward; Assistant Examiner: Cashion, Jr.,
EXNAM
       Merrell C.
       Number of Claims: 1
CLMN
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 334
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Surface treated oriented fluorocarbon films can be laminated to
       substrates using an adhesive composition of a selected copolymer of
       vinylidene fluoride and hexafluoropropylene and a selected diisocyanate
       curing agent in an organic solvent.
IT · 68258-85-5P
        (films, corona discharge-treated, laminates, adhesives for manuf. of)
RN
     68258-85-5 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and
CN
       tetrafluoroethene (9CI) (CA INDEX NAME)
     CM
     CRN
          19430-93-4
          C6 H3 F9
     CMF
```

IT

 $H_2C = CH - (CF_2)_3 - CF_3$ 

```
CM
     CRN
          116-14-3
     CMF
          C2 F4
     CM
          3
     CRN
          74-85-1
     CMF
          C2 H4
H_2C = CH_2
L21
     ANSWER 71 OF 74 USPATFULL on STN
ΑN
       85:41979 USPATFULL
TI
       Fluorinated copolymers with improved cure site
IN
       Finlay, Joseph B., Wilmington, DE, United States
PA
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
       (U.S. corporation)
PΙ
       US 4529784
                                19850716
AΙ
       US 1983-512688
                                19830711 (6)
DT
       Utility
FS
       Granted
EXNAM Primary Examiner: Henderson, Christopher A.
CLMN
       Number of Claims: 5
ECL ·
       Exemplary Claim: 1
       No Drawings
DRWN
LN.CNT 372
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Copolymers of tetrafluoroethylene and perfluoromethyl perfluorovinyl
       ether with a cure-site monomer of the formula R.sub.1 CH.dbd.CR.sub.2
       R.sub.3 wherein R.sub.1 and R.sub.2 are independently selected from
       hydrogen and fluorine and R.sub.3 is independently selected from
       hydrogen, fluorine and alkyl or perfluoroalkyl.
IT
    96387-51-8
        (rubber, heat-resistant)
RN
     96387-51-8 USPATFULL
CN
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
       and trifluoro(trifluoromethoxy)ethene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
          19430-93-4
     CMF C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
         1187-93-5
```

CMF

C3 F6 O

```
CF<sub>2</sub>
F-C-O-CF3
     CM
          3
     CRN
         116-14-3
     CMF C2 F4
L21 ANSWER 72 OF 74 USPATFULL on STN
AN
       85:20999 USPATFULL
ΤI
       Fluorocarbon copolymer films
IN
       Levy, Stanley B., Wilmington, DE, United States
PΑ
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
       (U.S. corporation)
ΡI
       US 4510301
                                19850409
       US 1983-485821
                                19830425 (6)
ΑI
       Continuation-in-part of Ser. No. US 1982-383454, filed on 1 Jun 1982,
RLI
       now abandoned
       Utility
DT
       Granted
FS
EXNAM Primary Examiner: Michl, Paul R.; Assistant Examiner: Walker, Alex H.
       Number of Claims: 20
CLMN
ECL
       Exemplary Claim: 1
DRWN
       2 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 558
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB
       A film of a fluorocarbon copolymer of ethylene, and tetrafluoroethylene
       or chlorotrifluoroethylene, which upon heat shrinking in the
       longitudinal direction, does not expand in the transverse direction.
IT
    68258-85-5
        (films, with good high-temp. mech. properties)
     68258-85-5 USPATFULL
RN
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and
CN
       tetrafluoroethene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
         19430-93-4
         C6 H3 F9
     CMF
H_2C = CH - (CF_2)_3 - CF_3
```

2

CRN 116-14-3 CMF C2 F4

```
CM
     CRN
          74-85-1
     CMF
          C2 .H4
H_2C = CH_2
L21
     ANSWER 73 OF 74 USPATFULL on STN
ΑN
       84:69165 USPATFULL
ΤI
       Polymer of TFE and f-alkyl ethylene
IN
       Fritschel, Scott J., Wilmington, DE, United States
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
PΙ
       US 4487902
                                19841211
       US 1983-507082
ΑI
                                19830623 (6)
       Continuation-in-part of Ser. No. US 1981-289493, filed on 6 Aug 1981,
RLI
       now abandoned which is a continuation-in-part of Ser. No. US
       1980-190562, filed on 25 Sep 1980, now abandoned
DT
       Utility
FS
       Granted
       Primary Examiner: Henderson, Christopher A.
EXNAM
CLMN
       Number of Claims: 2
ECL
       Exemplary Claim: 1
       No Drawings
DRWN
LN.CNT 425
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Copolymers of tetrafluoroethylene and fluorinated alkyl ethylenes are
AB
       obtained by this invention in which units of the copolymer derived from
       the ethylene comonomer are substantially uniformly positioned along the
       copolymer chain.
    82606-24-4P
IT
        (manuf. of melt-processable)
RN
     82606-24-4 USPATFULL
CN
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
       (9CI)
             (CA INDEX NAME)
     CM
          1
     CRN
         19430-93-4
         C6 H3 F9
     CMF
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
         116-14-3
```

F F | | | F-C==C-F

CMF

C2 F4

```
ANSWER 74 OF 74 USPATFULL on STN
L21
       83:26451 USPATFULL
AN
       Stabilized ethylene/tetrafluoroethylene copolymers
TI
IN
       Anderson, Jerrel C., Vienna, WV, United States
       E. I. Du Pont de Nemours & Co., Wilmington, DE, United States (U.S.
PA
       corporation)
PΙ
       US 4390655
                                19830628
AI
       US 1982-374616
                                19820503 (6)
       Continuation-in-part of Ser. No. US 1981-257107, filed on 24 Apr 1981,
RLI
       now abandoned
DT
       Utility
FS
       Granted
       Primary Examiner: Hoke, V. P.
EXNAM
CLMN
       Number of Claims: 7
       Exemplary Claim: 1
ECL
DRWN
       No Drawings
LN.CNT 510
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Presence of cuprous iodide or cuprous chloride provides protection to
AΒ
       ethylene/tetrafluoroethylene polymers against thermal degradation.
IT
    68258-85-5
        (heat stabilizers for, cuprous iodide or chloride as)
RN
     68258-85-5 USPATFULL
CN
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and
       tetrafluoroethene (9CI) (CA INDEX NAME)
     CM
        , 1
     CRN 19430-93-4
     CMF C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
          2
     CM
     CRN
          116-14-3
     CMF
         C2 F4
     CM
     CRN
          74-85-1
     CMF
          C2 H4
```

 $H_2C \longrightarrow CH_2$ 

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L23 ANSWER 1 OF 2 USPATFULL on STN AN 2003:23566 USPATFULL

TI Chemical amplification **photoresist** monomers, polymers therefrom and **photoresist** compositions containing the same

IN Jung, Jae Chang, Kyoungki-do, KOREA, REPUBLIC OF Lee, Geun Su, Kyoungki-do, KOREA, REPUBLIC OF Shin, Ki Soo, Kyoungki-do, KOREA, REPUBLIC OF

PI US 2003017404 A1 20030123

AI US 2002-54095 A1 20020122 (10)

PRAI KR 2001-38030 20010629

DT Utility

FS APPLICATION

LREP MARSHALL, GERSTEIN & BORUN, 6300 SEARS TOWER, 233 SOUTH WACKER, CHICAGO, IL, 60606-6357

CLMN Number of Claims: 28 ECL Exemplary Claim: 1 DRWN 1 Drawing Page(s)

LN.CNT 447

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A chemical amplification photoresist monomer, a photoresist polymer prepared thereof, and a photoresist composition using the polymer. More specifically, a chemical amplification photoresist polymer comprising a fluorine-containing monomer represented by Chemical Formula 1, and a composition comprising the polymer.

The **photoresist** composition has excellent etching resistance, heat resistance and adhesiveness, and is developable in aqueous tetramethylammonium hydroxide (TMAH) solution. As the composition has low light absorbance at 193 nm and 157 nm wavelength, it is very useful for forming ultramicro pattern in the process using a light source of far ultraviolet, especially of VUV (157 nm). ##STR1##

In the Formula, R.sub.1, R.sub.2, R.sub.3 and R.sub.4 is defined in the specification.

IT 488722-50-5P

(chem. amplification photoresist monomers, polymers for photoresist compns.)

RN 488722-50-5 USPATFULL

CM 1

CRN 488722-49-2 CMF C13 H17 N O4

CM 2

CRN 19430-93-4

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CM 3

CRN 85-40-5 CMF C8 H9 N O2

ANSWER 2 OF 2 USPATFULL on STN L23 AN 2003:17285 USPATFULL TIMaleimide-photoresist monomers containing halogen, polymers thereof and photoresist compositions comprising the same IN Lee, Geun Su, Kyoungki-do, KOREA, REPUBLIC OF Jung, Jae Chang, Kyoungki-do, JAPAN Jung, Min Ho, Kyoungki-do, KOREA, REPUBLIC OF Koh, Cha Won, Seoul, KOREA, REPUBLIC OF Shin, Ki Soo, Seoul, KOREA, REPUBLIC OF PΙ US 2003013037 20030116 Α1 ΑI US 2002-80335 20020221 (10) PRAI KR 2001-19815 20010413 KR 2001-19816 20010413 DT Utility APPLICATION FS MARSHALL, GERSTEIN & BORUN, 6300 SEARS TOWER, 233 SOUTH WACKER, CHICAGO, LREP IL, 60606-6357 CLMN Number of Claims: 24 ECL Exemplary Claim: 1 DRWN 8 Drawing Page(s) LN.CNT 640 CAS INDEXING IS AVAILABLE FOR THIS PATENT. AB Photoresist monomers, photoresist polymers prepared thereof, and photoresist compositions using the polymer are disclosed. More specifically, photoresist polymers comprising maleimide monomer represented by Formula 1, and a composition comprising the polymer thereof are disclosed. The photoresist composition has excellent etching resistance, heat resistance and adhesiveness, and can be developed in an aqueous tetramethylammonium hydroxide (TMAH) solution. As the composition has low light absorbance at 193 nm and 157 nm wavelength, and it is suitable for a process using ultraviolet light source such as VUV (157 nm). ##STR1##

wherein, X.sub.1, X.sub.2, R.sub.1, R.sub.2 and R.sub.3 are defined in the specification.

## IT 485804-88-4P

(maleimide-photoresist monomers contg. halogen for photoresist compns.) 485804-88-4 USPATFULL

RN 485804-88-4 USPATFULL
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,
polymer with 1-(heptadecafluorooctyl)-1H-pyrrole-2,5-dione and
3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene (9CI) (CA INDEX NAME)

CM :

CRN 172413-96-6 CMF C12 H2 F17 N O2

CM 2

CRN 154970-45-3 CMF C12 H18 O2

CM 3

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

=>

```
L49 ANSWER 1 OF 4 USPATFULL on STN
AN
       96:60365 USPATFULL
TI
       Refrigeration lubricants prepared by polymerizing alkene having a
       perfluoroalkyl group on one end thereof
       Nalewajek, David, West Seneca, NY, United States
IN
       Eibeck, Richard E., Orchard Park, NY, United States
       Thomas, Raymond H. P., Amherst, NY, United States
       AlliedSignal Inc., Morris County, NJ, United States (U.S. corporation)
PA
ΡI
       US 5534176
                                19960709
ΑI
       US 1995-380470
                                19950130 (8)
RLI
       Continuation of Ser. No. US 1992-982269, filed on 25 Nov 1992, now
       abandoned which is a continuation of Ser. No. US 1991-738077, filed on
       30 Jul 1991, now abandoned
DT
       Utility
FS
       Granted
       Primary Examiner: Medley, Margaret
EXNAM
LREP
       Gianneschi, Lois A.
       Number of Claims: 2
CLMN
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1109
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       The present invention provides a composition for use in refrigeration
       and air-conditioning comprising: (a) at least one refrigerant selected
       from the group consisting of hydrofluorocarbon, hydrochlorofluorocarbon,
       fluorocarbon, and chlorofluorocarbon; and (b) a sufficient amount to
       provide lubrication of at least one lubricant prepared by polymerizing
       alkene having a perfluoroalkyl group on one end thereof. The lubricant
       has a molecular weight of about 300 to about 3,000 and a viscosity of
       about 5 to about 150 centistokes at 37.degree. C. The lubricant is
       miscible in combination with the refrigerant in the range between about
       -40.degree. C. and at least about +20.degree. C.
TТ
    26838-54-0P, 1-Butene, 3,3,4,4,4-pentafluoro-, homopolymer
      179954-04-2P
        (prepn. of refrigeration lubricants)
RN
     26838-54-0 USPATFULL
CN
     1-Butene, 3,3,4,4,4-pentafluoro-, homopolymer (9CI) (CA INDEX NAME)
     CM
          1
     CRN
          374-27-6
     CMF
          C4 H3 F5
H_2C = CH - CF_2 - CF_3
RN
     179954-04-2 USPATFULL
CN
     1-Butene, 3,3,4,4,4-pentafluoro-, polymer with 1-propene (9CI) (CA INDEX
       NAME)
     CM
          1
     CRN
         374-27-6
     CMF
          C4 H3 F5
H_2C = CH - CF_2 - CF_3
```

```
L49
     ANSWER 3 OF 4 USPATFULL on STN
AN
        92:101070 USPATFULL
ΤI
        Fluorine-containing copolymer and curable composition containing the
IN
       Mohri, Haruhiko, Settsu, Japan
        Shimizu, Yoshiki, Settsu, Japan
        Saito, Hideya, Settsu, Japan
        Chida, Akira, Settsu, Japan
PA
       Daikin Industries, Ltd., Osaka, Japan (non-U.S. corporation)
PΙ
       US 5169915
                                19921208
ΑI
       US 1991-723073
                                19910628 (7)
PRAI
       JP 1990-172906
                            19900629
       JP 1991-151562
                            19910624
DT
       Utility
FS
       Granted
EXNAM
       Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim N.
       Armstrong & Kubovcik
CLMN
       Number of Claims: 4
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1208
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
       fluoroolefin unit (1), 5 to 45% by mole of the .beta .- methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties, heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
    141314-10-5 141504-97-4 141682-23-7
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
          84100-13-0
          C7 H3 F11
     CMF
H_2C = CH - (CF_2)_4 - CF_3
```

## STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2 CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM 4

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM 5

CRN 17832-28-9 CMF C6 H12 O2

$$H_2C = CH - O - (CH_2)_4 - OH$$

CM 6

CRN 3377-92-2 CMF C7 H12 O2

CM 7

CRN 769-78-8 CMF C9 H8 O2

```
L49 ANSWER 4 OF 4 USPATFULL on STN
       84:69165 USPATFULL
AN
       Polymer of TFE and f-alkyl ethylene
ΤI
IN
       Fritschel, Scott J., Wilmington, DE, United States
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PΑ
       (U.S. corporation)
                             19841211
       US 4487902
PΙ
       US 1983-507082
                                19830623 (6)
ΑI
       Continuation-in-part of Ser. No. US 1981-289493, filed on 6 Aug 1981,
RLI
       now abandoned which is a continuation-in-part of Ser. No. US
       1980-190562, filed on 25 Sep 1980, now abandoned
       Utility
DT
FS
       Granted
       Primary Examiner: Henderson, Christopher A.
EXNAM
CLMN
       Number of Claims: 2
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 425
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Copolymers of tetrafluoroethylene and fluorinated alkyl ethylenes are
AB
       obtained by this invention in which units of the copolymer derived from
       the ethylene comonomer are substantially uniformly positioned along the
       copolymer chain.
    82606-23-3P
ΙT
        (manuf. of melt-processable)
     82606-23-3 USPATFULL
RN
     1-Butene, 3,3,4,4-tetrafluoro-, polymer with tetrafluoroethene (9CI)
CN
       INDEX NAME)
     CM
          1
     CRN
         40723-71-5
     CMF
         C4 H4 F4
H_2C = CH - CF_2 - CHF_2
     CM
          2
          116-14-3
     CRN
     CMF
         C2 F4
```

=>

```
96:60365 USPATFULL
AN
       Refrigeration lubricants prepared by polymerizing alkene having a
TT
       perfluoroalkyl group on one end thereof
TN
       Nalewajek, David, West Seneca, NY, United States
       Eibeck, Richard E., Orchard Park, NY, United States
       Thomas, Raymond H. P., Amherst, NY, United States
       AlliedSignal Inc., Morris County, NJ, United States (U.S. corporation)
PA
PΙ
       US 5534176
                                19960709
       US 1995-380470
                                19950130 (8)
ΑI
       Continuation of Ser. No. US 1992-982269, filed on 25 Nov 1992, now
RLT
       abandoned which is a continuation of Ser. No. US 1991-738077, filed on
       30 Jul 1991, now abandoned
DT
       Utility
FS
       Granted
EXNAM Primary Examiner: Medley, Margaret
       Gianneschi, Lois A.
LREP
CLMN
       Number of Claims: 2
       Exemplary Claim: 1
ECL
DRWN
       No Drawings
LN.CNT 1109
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       The present invention provides a composition for use in refrigeration
       and air-conditioning comprising: (a) at least one refrigerant selected
       from the group consisting of hydrofluorocarbon, hydrochlorofluorocarbon,
       fluorocarbon, and chlorofluorocarbon; and (b) a sufficient amount to
       provide lubrication of at least one lubricant prepared by polymerizing
       alkene having a perfluoroalkyl group on one end thereof. The lubricant
       has a molecular weight of about 300 to about 3,000 and a viscosity of
       about 5 to about 150 centistokes at 37.degree. C. The lubricant is
       miscible in combination with the refrigerant in the range between about
       -40.degree. C. and at least about +20.degree. C.
    26936-60-7P 179954-05-3P
        (prepn. of refrigeration lubricants)
RN
     26936-60-7 USPATFULL
     1-Pentene, 3,3,4,4,5,5,5-heptafluoro-, homopolymer (9CI) (CA INDEX NAME)
CN
     CM
     CRN
          355-08-8
     CMF
          C5 H3 F7
H2C== CH- CF2- CF2- CF3
RN
     179954-05-3 USPATFULL
CN
     1-Pentene, 3,3,4,4,5,5,5-heptafluoro-, polymer with 1-propene (9CI)
       INDEX NAME)
     CM
          1
     CRN
          355-08-8
     CMF
          C5 H3 F7
H_2C = CH - CF_2 - CF_2 - CF_3
     CM
          2
     CRN
         115-07-1
```

L50 ANSWER 1 OF 5 USPATFULL on STN

 $H_3C-CH-CH_2$ 

```
ANSWER 2 OF 5 USPATFULL on STN
L50
AN
       93:44316 USPATFULL
       Fluorine-containing copolymer and curable composition containing the
ΤI
IN
       Mohri, Haruhiko, Settsu, Japan
       Shimizu, Yoshiki, Settsu, Japan
       Saito, Hideya, Settsu, Japan
       Chida, Akira, Settsu, Japan
       Daikin Industries, Ltd., Japan (non-U.S. corporation)
PA
       US 5216081
                               19930601
PΙ
AI
       US 1992-953792
                               19920930 (7)
       Division of Ser. No. US 1991-723073, filed on 28 Jun 1991, now patented,
RLI
       Pat. No. US 5169915
PRAI
       JP 1990-172906
                           19900629
       JP 1991-151562
                           19910624
       Utility
DT
FS
       Granted
EXNAM
       Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim, N.
       Armstrong, Westerman, Hattori, McLeland & Naughton
LREP
CLMN
       Number of Claims: 9
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1170
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
       fluoroolefin unit (1), 5 to 45% by mole of the .beta.-methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties, heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
IT
    141314-10-5 141504-97-4 141682-23-7
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI) (CA INDEX NAME)
     CM
          1
         84100-13-0
     CRN
```

CMF C7 H3 F11

$$H_2C = CH - (CF_2)_4 - CF_3$$

CRN 70780-97-1 CMF Unspecified

CCI PMS, MAN

## STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2

CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM. 4

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM 5

CRN 17832-28-9 CMF C6 H12 O2

$$H_2C = CH - O - (CH_2)_4 - OH$$

CM 6

CRN 3377-92-2 CMF C7 H12 O2

CM 7

CRN 769-78-8 CMF C9 H8 O2

CRN 374-27-6 CMF C4 H3 F5

 $H_2C = CH - CF_2 - CF_3$ 

CM 9

CRN 355-08-8 CMF C5 H3 F7

 $H_2C = CH - CF_2 - CF_2 - CF_3$ 

CM 10

CRN 116-14-3 CMF C2 F4

CM 11

CRN 115-11-7 CMF C4 H8

RN 141504-97-4 USPATFULL

CN Benzoic acid, ethenyl ester, polymer with 2-butenoic acid, Dianal SS 1084, ethenyl 2,2-dimethylpropanoate, 4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene, 2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene, 3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and 3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI) (CA INDEX NAME)

CM 1

CRN 141443-62-1 CMF Unspecified CCI PMS, MAN

STRUCTURE DIAGRAM IS NOT AVAILABLE

CRN 84100-13-0

```
ANSWER 3 OF 5 USPATFULL on STN
L50
       92:101070 USPATFULL
AN
       Fluorine-containing copolymer and curable composition containing the
ΤI
       Mohri, Haruhiko, Settsu, Japan
IN
       Shimizu, Yoshiki, Settsu, Japan
       Saito, Hideya, Settsu, Japan
       Chida, Akira, Settsu, Japan
       Daikin Industries, Ltd., Osaka, Japan (non-U.S. corporation)
PA
ΡI
       US 5169915
                               19921208
ΑI
       US 1991-723073
                               19910628 (7)
PRAI
       JP 1990-172906
                           19900629
       JP 1991-151562
                           19910624
DT
       Utility
       Granted
FS
       Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim N.
EXNAM
LREP
       Armstrong & Kubovcik
       Number of Claims: 4
CLMN
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1208
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
       fluoroolefin unit (1), 5 to 45% by mole of the .beta.-methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties; heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
TΤ
    141314-10-5 141504-97-4 141682-23-7
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
         84100-13-0
     CMF C7 H3 F11
H_2C = CH - (CF_2)_4 - CF_3
```

CRN 70780-97-1 CMF Unspecified CCI PMS, MAN

## STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2 CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM 4

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM 5

CRN 17832-28-9 CMF C6 H12 O2

$$H_2C = CH - O - (CH_2)_4 - OH$$

CM 6

CRN 3377-92-2 CMF C7 H12 O2

$$\begin{array}{c} {\rm O} \\ || \\ {\rm H_2C} = {\rm CH-O-C-Bu-t} \end{array}$$

```
L50 ANSWER 4 OF 5 USPATFULL on STN
        84:69165 USPATFULL
AN
       Polymer of TFE and f-alkyl ethylene
TI
       Fritschel, Scott J., Wilmington, DE, United States
IN
PA
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
        (U.S. corporation)
                                19841211
       US 4487902
PΙ
       US 1983-507082
                                19830623 (6)
AΙ
       Continuation-in-part of Ser. No. US 1981-289493, filed on 6 Aug 1981,
RLI
       now abandoned which is a continuation-in-part of Ser. No. US
       1980-190562, filed on 25 Sep 1980, now abandoned
DT
       Utility
       Granted
FS
       Primary Examiner: Henderson, Christopher A.
EXNAM
       Number of Claims: 2
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 425
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Copolymers of tetrafluoroethylene and fluorinated alkyl ethylenes are
AΒ
       obtained by this invention in which units of the copolymer derived from
       the ethylene comonomer are substantially uniformly positioned along the
       copolymer chain.
IT
    28428-96-8P
         (manuf. of melt-processable)
     28428-96-8 USPATFULL
RN
     1-Pentene, 3,3,4,4,5,5,5-heptafluoro-, polymer with tetrafluoroethene
CN
        (9CI)
              (CA INDEX NAME)
     CM
          1
     CRN
          355-08-8
     CMF
          C5 H3 F7
H_2C = CH - CF_2 - CF_2 - CF_3
     CM
          2
     CRN
          116-14-3
     CMF
          C2 F4
L50
     ANSWER 5 OF 5 USPATFULL on STN
       74:57951 USPATFULL
ΑN
ΤТ
       PROCESS FOR CROSSLINKING FLUOROCARBON POLYMERS
IN
       Wall, deceased, Leo A., late of McLean, VA, United States BY Leola
       Grace Wall, administratrix
       Brown, Daniel W., Bethesda, MD, United States
       Florin, Roland E., Takoma Park, MD, United States
PA
       The United States of America as represented by the Secretary of the
       Army, Washington, DC, United States (U.S. government)
PΙ
       US 3853828
                                19741210
       US 1973-418000
AΙ
                                19731121 (5)
DT
       Utility
```

FS Granted

EXNAM Primary Examiner: Levin, Stanford M.

LREP Kelly, Edward J., Berl, Herbert, Erkkila, A. Victor

CLMN Number of Claims: 13

ECL Exemplary Claim: 1

DRWN 3 Drawing Figure(s); 3 Drawing Page(s)

LN.CNT 354

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Amethod for crosslinking specified fluorocarbon polymers, such as Viton stomers (copolymers of vinylidene fluoride and hexafluoropropene), by exposing the polymer to dilute fluorine gas, e.g., 5% fluorine in helium, preferably under ordinary temperature and pressure, using relatively small amounts of fluorine so that crosslinking of the polymer results with substantially no introduction of fluorine into the polymer molecule. The crosslinked polymers or vulcanizates thus obtained possess better thermal stability than vulcanizates produced from such fluorocarbon polymers by prior art crosslinking methods.

IT 28428-96-8

(rubber, vulcanizing agent for, fluorine as)

RN 28428-96-8 USPATFULL

CN 1-Pentene, 3,3,4,4,5,5,5-heptafluoro-, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 355-08-8 CMF C5 H3 F7

```
L50
     ANSWER 5 OF 5 USPATFULL on STN
       74:57951 USPATFULL
AN
TΙ
       PROCESS FOR CROSSLINKING FLUOROCARBON POLYMERS
       Wall, deceased, Leo A., late of McLean, VA, United States BY Leola
TN
       Grace Wall, administratrix
       Brown, Daniel W., Bethesda, MD, United States
       Florin, Roland E., Takoma Park, MD, United States .
       The United States of America as represented by the Secretary of the
PA
       Army, Washington, DC, United States (U.S. government)
       US 3853828
ΡI
                               19741210
ΑI
       US 1973-418000
                               19731121 (5)
       Utility
DT
FS
       Granted
       Primary Examiner: Levin, Stanford M.
EXNAM
LREP
       Kelly, Edward J., Berl, Herbert, Erkkila, A. Victor
       Number of Claims: 13
CLMN
ECL
       Exemplary Claim: 1
DRWN
       3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 354
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A method for crosslinking specified fluorocarbon polymers, such as Viton
       stomers (copolymers of vinylidene fluoride and hexafluoropropene), by
       exposing the polymer to dilute fluorine gas, e.g., 5% fluorine in
       helium, preferably under ordinary temperature and pressure, using
       relatively small amounts of fluorine so that crosslinking of the polymer
       results with substantially no introduction of fluorine into the polymer
       molecule. The crosslinked polymers or vulcanizates thus obtained possess
       better thermal stability than vulcanizates produced from such
       fluorocarbon polymers by prior art crosslinking methods.
ΙT
    28428-96-8
        (rubber, vulcanizing agent for, fluorine as)
RN
     28428-96-8 USPATFULL
     1-Pentene, 3,3,4,4,5,5,5-heptafluoro-, polymer with tetrafluoroethene
CN
             (CA INDEX NAME)
       (9CI)
     CM
          1
     CRN
         355-08-8
     CMF C5 H3 F7
H_2C = CH - CF_2 - CF_2 - CF_3
          2
     CM
     CRN
          116-14-3
          C2 F4
     CMF
```

F— C=== C-- F

```
ANSWER 75 OF 81 USPATFULL on STN
L51
       86:15457 USPATFULL
AN
       Tetrafluoroethylene fine powder and preparation thereof
ΤI
       Malhotra, Satish C., Parkersburg, WV, United States
IN
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
                                19860318
PΙ
       US 4576869
       US 1984-621798
                                19840618 (6)
ΑI
       Utility
DT
FS
       Granted
       Primary Examiner: Wong, Jr., Harry
EXNAM
CLMN
       Number of Claims: 3
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 536
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Tetrafluoroethylene fine powder resins are described which have
       surprisingly high extrusion pressures and molecular weights which make
       them useful in post-paste extruded stretching operations. The resins are
       made by using a permanganate polymerization initiator and controlling
       its rate of addition so that the reaction slows down at the end of the
       polymerization.
    82606-24-4P
IT
        (prepn. of powd., for paste extrusion and stretching)
RN
     82606-24-4 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
             (CA INDEX NAME)
       (9CI)
     CM
          1
     CRN
          19430-93-4
    · CMF
          C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
         116-14-3
     CMF
          C2 F4
    ANSWER 76 OF 81 USPATFULL on STN
L51
       85:63696 USPATFULL
AN
       Lamination of fluorocarbon films
TI
IN
       Wolfe, Jr., William R., Wilmington, DE, United States
PA
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
       (U.S. corporation)
ΡI
       US 4549921
                                19851029
ΑI
       US 1983-546546
                                19831028 (6)
DT
       Utility
FS
       Primary Examiner: Kimlin, Edward; Assistant Examiner: Cashion, Jr.,
EXNAM
       Merrell C.
       Number of Claims: 1
CLMN
```

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 334

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Surface treated oriented fluorocarbon films can be laminated to substrates using an adhesive composition of a selected copolymer of vinylidene fluoride and hexafluoropropylene and a selected diisocyanate curing agent in an organic solvent.

IT 68258-85-5P

(films, corona discharge-treated, laminates, adhesives for manuf. of)

RN 68258-85-5 USPATFULL

CN 1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 19430-93-4 CMF C6 H3 F9

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CM 2

CRN 116-14-3 CMF C2 F4

F F | | F-C==C-F

CM 3

CRN 74-85-1 CMF C2 H4

 $H_2C = CH_2$ 

L51 ANSWER 77 OF 81 USPATFULL on STN

AN 85:41979 USPATFULL

TI Fluorinated copolymers with improved cure site

IN Finlay, Joseph B., Wilmington, DE, United States

PA E. I. Du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

PI US 4529784

19850716

```
L51 ANSWER 77 OF 81 USPATFULL on STN
AN
       85:41979 USPATFULL
TТ
       Fluorinated copolymers with improved cure site
       Finlay, Joseph B., Wilmington, DE, United States
IN
PA
       E. I. Du Pont de Nemours and Company, Wilmington, 'DE, United States
       (U.S. corporation)
       US 4529784
                                19850716
PI
       US 1983-512688
                                19830711 (6)
ΑI
DT
       Utility
FS
       Granted
       Primary Examiner: Henderson, Christopher A.
EXNAM
CLMN
       Number of Claims: 5
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 372
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Copolymers of tetrafluoroethylene and perfluoromethyl perfluorovinyl
       ether with a cure-site monomer of the formula R.sub.1 CH.dbd.CR.sub.2
       R.sub.3 wherein R.sub.1 and R.sub.2 are independently selected from
       hydrogen and fluorine and R.sub.3 is independently selected from
       hydrogen, fluorine and alkyl or perfluoroalkyl.
    96387-51-8
        (rubber, heat-resistant)
RN
     96387-51-8 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
       and trifluoro(trifluoromethoxy)ethene (9CI) (CA INDEX NAME)
     CM
     CRN
          19430-93-4
          C6 H3 F9
     CMF
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
          1187-93-5
     CMF
          C3 F6 O
  CF<sub>2</sub>
F-C-O-CF3
     CM
          3
     CRN
          116-14-3
     CMF
          C2 F4
```

L51 ANSWER 78 OF 81 USPATFULL on STN AN 85:20999 USPATFULL

```
Fluorocarbon copolymer films
TI
       Levy, Stanley B., Wilmington, DE, United States
IN
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
PA
       (U.S. corporation)
PΙ
       US 4510301
                               19850409
                               19830425 (6)
ΑI
       US 1983-485821
       Continuation-in-part of Ser. No. US 1982-383454, filed on 1 Jun 1982,
RLI
       now abandoned
DT
       Utility
       Granted
FS
       Primary Examiner: Michl, Paul R.; Assistant Examiner: Walker, Alex H.
EXNAM
       Number of Claims: 20
CLMN
       Exemplary Claim: 1
ECL
       2 Drawing Figure(s); 1 Drawing Page(s)
DRWN
LN.CNT 558
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A film of a fluorocarbon copolymer of ethylene, and tetrafluoroethylene
AB
       or chlorotrifluoroethylene, which upon heat shrinking in the
       longitudinal direction, does not expand in the transverse direction.
    68258-85-5
IT
        (films, with good high-temp. mech. properties)
     68258-85-5 USPATFULL
RN '
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and
CN
```

tetrafluoroethene (9CI) (CA INDEX NAME)

```
L51 ANSWER 79 OF 81 USPATFULL on STN
       84:69165 USPATFULL
AN
ΤI
       Polymer of TFE and f-alkyl ethylene
       Fritschel, Scott J., Wilmington, DE, United States
IN
PA
       E. I. Du Pont de Nemours and Company, Wilmington, DE, United States
       (U.S. corporation)
PΙ
       US 4487902
                                19841211
       US 1983-507082
ΑI
                                19830623 (6)
       Continuation-in-part of Ser. No. US 1981-289493, filed on 6 Aug 1981,
RLI
       now abandoned which is a continuation-in-part of Ser. No. US
       1980-190562, filed on 25 Sep 1980, now abandoned
DT
       Utility
FS
       Granted
EXNAM
       Primary Examiner: Henderson, Christopher A.
       Number of Claims: 2
       Exemplary Claim: 1
ECL
DRWN
       No Drawings
LN.CNT 425
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Copolymers of tetrafluoroethylene and fluorinated alkyl ethylenes are
       obtained by this invention in which units of the copolymer derived from
       the ethylene comonomer are substantially uniformly positioned along the
       copolymer chain.
II
    82606-24-4P
        (manuf. of melt-processable)
RN
     82606-24-4 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with tetrafluoroethene
CN
             (CA INDEX NAME)
       (9CI)
     CM
          1
     CRN
          19430-93-4
    · CMF
          C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
          116-14-3
          C2 F4
     CMF
     ANSWER 80 OF 81 USPATFULL on STN
L51
       83:26451 USPATFULL
AN
ΤI
       Stabilized ethylene/tetrafluoroethylene copolymers
       Anderson, Jerrel C., Vienna, WV, United States
IN
       E. I. Du Pont de Nemours & Co., Wilmington, DE, United States (U.S.
PA
       corporation)
PΙ
       US 4390655
                                19830628
       US 1982-374616
AΤ
                                19820503 (6)
       Continuation-in-part of Ser. No. US 1981-257107, filed on 24 Apr 1981,
RLI
       now abandoned
DT
       Utility
```

FS

Granted

```
EXNAM Primary Examiner: Hoke, V. P.
       Number of Claims: 7
       Exemplary Claim: 1
ECL
DRWN
       No Drawings
LN.CNT 510
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Presence of cuprous iodide or cuprous chloride provides protection to
       ethylene/tetrafluoroethylene polymers against thermal degradation.
    68258-85-5
ΙT
        (heat stabilizers for, cuprous iodide or chloride as)
RN
     68258-85-5 USPATFULL
     1-Hexene, 3,3,4,4,5,5,6,6-nonafluoro-, polymer with ethene and
CN
       tetrafluoroethene (9CI) (CA INDEX NAME)
     CM
     CRN
          19430-93-4
     CMF C6 H3 F9
H_2C = CH - (CF_2)_3 - CF_3
     CM
          2
     CRN
          116-14-3
     CMF
         C2 F4
     CM
          3
     CRN
          74-85-1
     CMF C2 H4
H_2C \longrightarrow CH_2
    ANSWER 81 OF 81 USPATFULL on STN
L51
       78:61599 USPATFULL
AN
ΤI
       Terpolymers of tetrafluoroethylene, ethylene and perfluoroalkyl vinyl
       monomer and process for producing the same
       Ukihashi, Hiroshi, Tokyo, Japan
IN
       Yamabe, Masaaki, Machida, Japan
       Miyake, Haruhisa, Yokohama, Japan
       Asahi Glass Company, Ltd., Tokyo, Japan (non-U.S. corporation)
PA
ΡI
       US 4123602
                                19781031
ΑI
       US 1978-867894
                                19780109 (5)
       Continuation of Ser. No. US 1976-689526, filed on 24 May 1976, now
RLI
       abandoned
DT
       Utility
FS
       Granted
EXNAM
       Primary Examiner: Wong, Jr., Harry
       Oblon, Fisher, Spivak, McClelland & Maier
LREP
```

CLMN

ECL

Number of Claims: 34

Exemplary Claim: 1

DRWN No Drawings

LN.CNT 547

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Copolymers of tetrafluoroethylene and ethylene essentially consist of components of from 40 to 60 mole % of tetrafluoroethylene, 40 to 60 mole % of ethylene and 0.1 to 10 mole % of perfluoroalkyl vinyl component having the formula

CH.sub.2 .dbd. CH--C.sub.n F.sub.2n + 1

wherein n is an integer of 2 to 10. Said copolymer has a volumetric flow rate of 10 to 500 mm.sup.3 /sec. defined in the specification.

The copolymers of tetrafluoroethylene and ethylene are produced by copolymerizing tetrafluoroethylene and ethylene with a molar ratio of C.sub.2 F.sub.4 /C.sub.2 H.sub.4 being kept essentially higher than 40/60 in the reactor in the presence of a small amount of a perfluoroalkyl vinyl monomer having the formula

CH.sub.2 .dbd. CH--C.sub.n F.sub.2 + 1

wherein n is an integer of 2 to 10.

This is a continuation of application Ser. No. 689.526, filed May 24, 1976, now abandoned.

IT 68258-85-5P

(manuf. of heat-resistant)

RN 68258-85-5 USPATFULL

CN 1-Hexene, 3,3,4,4,5,5,6,6,6-nonafluoro-, polymer with ethene and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 19430-93-4 CMF C6 H3 F9

 $H_2C = CH - (CF_2)_3 - CF_3$ 

CM 2

CRN 116-14-3 CMF C2 F4

CM 3

CRN 74-85-1 CMF C2 H4

 $H_2C \longrightarrow CH_2$ 

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```
L52
    ANSWER 1 OF 3 USPATFULL on STN
       96:60365 USPATFULL
AN
       Refrigeration lubricants prepared by polymerizing alkene having a
TI '
       perfluoroalkyl group on one end thereof
       Nalewajek, David, West Seneca, NY, United States
IN
       Eibeck, Richard E., Orchard Park, NY, United States
       Thomas, Raymond H. P., Amherst, NY, United States
PΑ
       AlliedSignal Inc., Morris County, NJ, United States (U.S. corporation)
PΙ
       US 5534176
                               .19960709
       US 1995-380470
                                19950130 (8)
AΤ
       Continuation of Ser. No. US 1992-982269, filed on 25 Nov 1992, now
RLI
       abandoned which is a continuation of Ser. No. US 1991-738077, filed on
       30 Jul 1991, now abandoned
       Utility
DT
       Granted
FS
       Primary Examiner: Medley, Margaret
EXNAM
       Gianneschi, Lois A.
LREP
CLMN
       Number of Claims: 2
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1109
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       The present invention provides a composition for use in refrigeration
       and air-conditioning comprising: (a) at least one refrigerant selected
       from the group consisting of hydrofluorocarbon, hydrochlorofluorocarbon,
       fluorocarbon, and chlorofluorocarbon; and (b) a sufficient amount to
       provide lubrication of at least one lubricant prepared by polymerizing
       alkene having a perfluoroalkyl group on one end thereof. The lubricant
       has a molecular weight of about 300 to about 3,000 and a viscosity of
       about 5 to about 150 centistokes at 37.degree. C. The lubricant is
       miscible in combination with the refrigerant in the range between about
       -40.degree. C. and at least about +20.degree. C.
    179954-02-0P 179954-07-5P
        (prepn. of refrigeration lubricants)
RN
     179954-02-0 USPATFULL
CN
     1-Heptene, 3,3,4,4,5,5,6,6,7,7,7-undecafluoro-, homopolymer (9CI)
       INDEX NAME)
     CM
          1
     CRN
          84100-13-0
     CMF
          C7 H3 F11
H_2C = CH - (CF_2)_4 - CF_3
RN
     179954-07-5 USPATFULL
CN
     1-Heptene, 3,3,4,4,5,5,6,6,7,7,7-undecafluoro-, polymer with 1-propene
              (CA INDEX NAME)
       (9CI)
     CM
          1
          84100-13-0
     CRN
         C7 H3 F11
     CMF
H_2C = CH - (CF_2)_4 - CF_3
```

### $H_3C-CH-CH_2$

```
ANSWER 2 OF 3 USPATFULL on STN
L52
AN
       93:44316 USPATFULL
       Fluorine-containing copolymer and curable composition containing the
ΤI
IN
       Mohri, Haruhiko, Settsu, Japan
       Shimizu, Yoshiki, Settsu, Japan
       Saito, Hideya, Settsu, Japan
       Chida, Akira, Settsu, Japan
       Daikin Industries, Ltd., Japan (non-U.S. corporation)
PA
PΙ
       US 5216081
                               19930601
       US 1992-953792
                               19920930 (7)
AΙ
RLI
       Division of Ser. No. US 1991-723073, filed on 28 Jun 1991, now patented,
       Pat. No. US 5169915
                           19900629
PRAI
       JP 1990-172906
       JP 1991-151562
                           19910624
DT
       Utility
ES
       Granted
       Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim, N.
EXNAM
       Armstrong, Westerman, Hattori, McLeland & Naughton
LREP
       Number of Claims: 9
CLMN
       Exemplary Claim: 1
ECL
       No Drawings
DRWN
LN.CNT 1170
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
AB
       fluoroolefin unit (1), 5 to 45% by mole of the .beta.-methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties, heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
    141314-10-5 141504-97-4 141682-23-7
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI)
                                                           (CA INDEX NAME)
     CM
```

$$H_2C = CH - (CF_2)_4 - CF_3$$

CM 2

CRN 70780-97-1 CMF Unspecified CCI PMS, MAN

## STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2 CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM 4

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM 5

CRN 17832-28-9 CMF C6 H12 O2

$$H_2C = CH - O - (CH_2)_4 - OH$$

CM · 6

CRN 3377-92-2 CMF C7 H12 O2

$$\begin{array}{c} \cdot & \circ \\ \parallel \\ \text{H}_2\text{C} = \text{CH-O-C-Bu-t} \end{array}$$

CM '

CRN 769-78-8 CMF C9 H8 O2

CM 8

CRN 374-27-6 CMF C4 H3 F5

$$H_2C = CH - CF_2 - CF_3$$

CM 9

CRN 355-08-8 CMF C5 H3 F7

$$H_2C = CH - CF_2 - CF_2 - CF_3$$

```
L52 ANSWER 3 OF 3 USPATFULL on STN
AN
       92:101070 USPATFULL
       Fluorine-containing copolymer and curable composition containing the
ΤI
IN
       Mohri, Haruhiko, Settsu, Japan
       Shimizu, Yoshiki, Settsu, Japan
       Saito, Hideya, Settsu, Japan
       Chida, Akira, Settsu, Japan
       Daikin Industries, Ltd., Osaka, Japan (non-U.S. corporation)
PΑ
PΤ
       US 5169915
                               19921208
ΑI
       US 1991-723073
                               19910628 (7)
       JP 1990-172906
PRAI
                           19900629
       JP 1991-151562
                           19910624
DT
       Utility
FS
       Granted
EXNAM
       Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim N.
LREP
       Armstrong & Kubovcik
CLMN
       Number of Claims: 4
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1208
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
       fluoroolefin unit (1), 5 to 45% by mole of the beta -methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties, heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
    141314-10-5 141504-97-4 141682-23-7
IT
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI)
                                                           (CA INDEX NAME)
     CM
          1
     CRN
          84100-13-0
         C7 H3 F11
     CMF
```

 $H_2C = CH - (CF_2)_4 - CF_3$ 

CRN 70780-97-1 CMF Unspecified CCI PMS, MAN

# STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2 CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM 4

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM 5

```
L53
     ANSWER 2 OF 11 USPATFULL on STN
       96:60365 USPATFULL
AN
       Refrigeration lubricants prepared by polymerizing alkene having a
ΤI
       perfluoroalkyl group on one end thereof
       Nalewajek, David, West Seneca, NY, United States
IN
       Eibeck, Richard E., Orchard Park, NY, United States
       Thomas, Raymond H. P., Amherst, NY, United States
       AlliedSignal Inc., Morris County, NJ, United States (U.S. corporation)
PA
       US 5534176
                               19960709
PI
       US 1995-380470
                               19950130 (8)
ΑI
       Continuation of Ser. No. US 1992-982269, filed on 25 Nov 1992, now
RLI
      abandoned which is a continuation of Ser. No. US 1991-738077, filed on
       30 Jul 1991, now abandoned
       Utility
DT
FS
       Granted
       Primary Examiner: Medley, Margaret
EXNAM
LREP
       Gianneschi, Lois A.
CLMN
       Number of Claims: 2
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1109
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       The present invention provides a composition for use in refrigeration
       and air-conditioning comprising: (a) at least one refrigerant selected
       from the group consisting of hydrofluorocarbon, hydrochlorofluorocarbon,
       fluorocarbon, and chlorofluorocarbon; and (b) a sufficient amount to
       provide lubrication of at least one lubricant prepared by polymerizing
       alkene having a perfluoroalkyl group on one end thereof. The lubricant
       has a molecular weight of about 300 to about 3,000 and a viscosity of
       about 5 to about 150 centistokes at 37.degree. C. The lubricant is
       miscible in combination with the refrigerant in the range between about
       -40.degree. C. and at least about +20.degree. C.
    152845-46-0P, (Perfluorohexyl)ethylene polymer
TT
      179954-08-6P
        (prepn. of refrigeration lubricants)
RN
     152845-46-0 USPATFULL
CN
     1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, homopolymer (9CI)
       INDEX NAME)
     CM
          1
         25291-17-2
     CRN
     CMF
         C8 H3 F13
```

 $H_2C = CH - (CF_2)_5 - CF_3$ 

```
L53 ANSWER 3 OF 11 USPATFULL on STN
       94:77476 USPATFULL
AN
       Oligomers of fluorinated olefins
TI
       von Werner, Konrad, Wald/Alz, Germany, Federal Republic of
IN
       Hoechst Aktiengesellschaft, Burgkirchen, United States (non-U.S.
PA
       corporation)
                                19940906
ΡI
       US 5344580
       US 1992-983691
                                19921201 (7)
AΙ
       DE 1991-4139765
                           19911203
PRAI
DT
       Utility
FS
       Granted
EXNAM
       Primary Examiner: McAvoy, Ellen M.
       Number of Claims: 16
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 306
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       Oligomers of compounds of the formula
       X--(CF.sub.2).sub.a --O.sub.b --(CH.sub.2).sub.c --CH=CH.sub.2(1)
       and co-oligomers of compounds of the formula (1) together with compounds
       of the formula
       X--(CX.sub.2).sub.d --O.sub.b --(CX.sub.2).sub.c --CX=CX.sub.2(2)
       in which X is hydrogen or fluorine, a is a number from 2 to 16, b and c
       are, independently of one another, 0 or 1, and d is a number from 0 to
       6, with a mean degree of oligomerization of 2 to 4, are obtained by
       heating a solution of the monomers in a hydrocarbon together with a free
       radical-forming catalyst to 135.degree. to 180.degree. C. The oligomers
       are lubricating agents and lubricants.
   152845-42-6P, 1-Octene-(perfluorohexyl)ethylene polymer
      152845-43-7P, Ethylene-(perfluorohexyl)ethylene polymer
      152845-44-8P, (Perfluorohexyl) ethylene-3-(1,1,2,2-
      terafluoroethoxy) -1-propene copolymer 152845-45-9P,
      Hexafluoropropylene-(perfluorohexyl)ethylene copolymer
      152845-46-0P, (Perfluorohexyl)ethylene polymer
        (oligomeric, manuf. of, by radical polymn. in hydrocarbons)
RN
     152845-42-6 USPATFULL
     1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, polymer with 1-octene
CN
             (CA INDEX NAME)
       (9CI)
     CM
          1
     CRN
          25291-17-2
     CMF
         C8 H3 F13
H_2C = CH - (CF_2)_5 - CF_3
     CM
          2
     CRN
          111-66-0
     CMF
          C8 H16
H_2C = CH - (CH_2)_5 - Me
```

RN

152845-43-7 USPATFULL

```
1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, polymer with ethene
CN
        (9CI) (CA INDEX NAME)
     CM
          1
     CRN 25291-17-2
     CMF C8 H3 F13
H_2C = CH - (CF_2)_5 - CF_3
     CM
          2
     CRN 74-85-1
     CMF C2 H4
H_2C = CH_2
RN
     152845-44-8 USPATFULL
CN
     1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, polymer with
       3-(1,1,2,2-tetrafluoroethoxy)-1-propene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
          25291-17-2
     CMF C8 H3 F13
H_2C = CH - (CF_2)_5 - CF_3
     CM
          2
     CRN 1428-33-7
     CMF C5 H6 F4 O
H_2C = CH - CH_2 - O - CF_2 - CHF_2
     152845-45-9 USPATFULL
RN
     1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, polymer with
CN
       1,1,2,3,3,3-hexafluoro-1-propene (9CI) (CA INDEX NAME)
     CM
          1
     CRN
         25291-17-2
          C8 H3 F13
     CMF
H_2C = CH - (CF_2)_5 - CF_3
     CM
          2
     CRN 116-15-4
     CMF C3 F6
```

RN 152845-46-0 USPATFULL CN 1-Octene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 25291-17-2

```
L53
    ANSWER 4 OF 11 USPATFULL on STN
AN
       93:44316 USPATFULL
       Fluorine-containing copolymer and curable composition containing the
TI
       Mohri, Haruhiko, Settsu, Japan
IN
       Shimizu, Yoshiki, Settsu, Japan
       Saito, Hideya, Settsu, Japan
       Chida, Akira, Settsu, Japan
       Daikin Industries, Ltd., Japan (non-U.S. corporation)
PΑ
ΡI
                               19930601
       US 5216081
       US 1992-953792
                               19920930 (7)
ΑI
       Division of Ser. No. US 1991-723073, filed on 28 Jun 1991, now patented,
RLI
       Pat. No. US 5169915
                           19900629
PRAI
       JP 1990-172906
       JP 1991-151562
                           19910624
DT
       Utility
FS
       Granted
      Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim, N.
EXNAM
       Armstrong, Westerman, Hattori, McLeland & Naughton
       Number of Claims: 9
CLMN
ECL
       Exemplary Claim: 1
       No Drawings
DRWN
LN.CNT 1170
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
AB
       fluoroolefin unit (1), 5 to 45% by mole of the .beta.-methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties, heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
TT
   141314-10-5 141504-97-4 141682-23-7
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI)
                                                           (CA INDEX NAME)
     CM
          1
     CRN
         84100-13-0
     CMF C7 H3 F11
```

CM :

CRN 70780-97-1

CMF Unspecified

CCI PMS, MAN

## STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2

CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM 4

CRN 19430-93-4

CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM ·5

CRN 17832-28-9

CMF C6 H12 O2

$$_{\rm H_2C}$$
 CH-O- (CH<sub>2</sub>)  $_{\rm 4}$ -OH

CM 6

CRN 3377-92-2

CMF C7 H12 O2

CM 7

CRN 769-78-8

CMF C9 H8 O2

CM 8

CRN 374-27-6 CMF C4 H3 F5

 $H_2C = CH - CF_2 - CF_3$ 

CM 9

CRN 355-08-8 CMF C5 H3 F7

 $H_2C = CH - CF_2 - CF_2 - CF_3$ 

CM 10

CRN 116-14-3 CMF C2 F4

F-C= C-F

CM 11

CRN 115-11-7 CMF C4 H8

СH<sub>2</sub> || H<sub>3</sub>C-- С-- СH<sub>3</sub>

RN 141504-97-4 USPATFULL

CN Benzoic acid, ethenyl ester, polymer with 2-butenoic acid, Dianal SS 1084, ethenyl 2,2-dimethylpropanoate, 4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene, 2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene, 3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and 3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI) (CA INDEX NAME)

CM 1

CRN 141443-62-1 CMF Unspecified CCI PMS, MAN

```
L53 ANSWER 5 OF 11 USPATFULL on STN
AN
       92:101070 USPATFULL
       Fluorine-containing copolymer and curable composition containing the
TI
       Mohri, Haruhiko, Settsu, Japan
IN
       Shimizu, Yoshiki, Settsu, Japan
       Saito, Hideya, Settsu, Japan
       Chida, Akira, Settsu, Japan
       Daikin Industries, Ltd., Osaka, Japan (non-U.S. corporation)
PA
       US 5169915
PΙ
                               19921208
       US 1991-723073
ΑI
                               19910628 (7)
PRAI
       JP 1990-172906
                           19900629
       JP 1991-151562
                           19910624
DT
       Utility
FS
       Granted
EXNAM
       Primary Examiner: Schofer, Joseph L.; Assistant Examiner: Sarofim N.
       Armstrong & Kubovcik
CLMN
       Number of Claims: 4
ECL
       Exemplary Claim: 1
DRWN
       No Drawings
LN.CNT 1208
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       A fluorine-containing copolymer comprising 20 to 60% by mole of the
       fluoroolefin unit (1), 5 to 45% by-mole of the beta. -methyl substituted
       .alpha.-olefin unit (2), 1 to 45% by mole of the unit (3) derived from a
       monomer having a chemically curable functional group, 1 to 45% by mole
       of the unit (4) derived from a monomer having ester moieties in the side
       chains and 0 to 45% by mole of the unit (5) derived from a
       copolymerizable monomer other than the above monomers, if necessary, 0.1
       to 15% by mole of the unit (6) derived from a monomer having carboxyl
       groups. The copolymer can provide a curable composition alone or with an
       acrylic polymer. The fluorine-containing copolymer is excellent in
       solvent-solubility, compatibility with curing agents, additives and
       other polymers, pigment dispersibility, curing reactivity,
       dispersibility to water, pot life, film forming ability, coating
       properties, and the like. The coating film prepared from the copolymer
       has a high weatherability and is excellent in film properties such as
       stain resistance, heat-yellowing resistance, dechlorination resistance,
       optical properties, adhesion to a substrate, mechanical properties, heat
       resistance, chemical resistance, solvent (gasoline) resistance, water
       resistance and good appearance of finished products.
    141314-10-5 141504-97-4 141682-23-7
TT
        (coatings, water-thinned, yellowing- and heat-resistant)
RN
     141314-10-5 USPATFULL
CN
     Benzoic acid, ethenyl ester, polymer with ethenyl 2,2-dimethylpropanoate,
       4-(ethenyloxy)-1-butanol, 3,3,4,4,5,5,5-heptafluoro-1-pentene,
       2-methyl-1-propene, 3,3,4,4,5,5,6,6,6-nonafluoro-1-hexene,
       3,3,4,4,4-pentafluoro-1-butene, tetrafluoroethene, Takenate D 140N,
       3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octene and
       3,3,4,4,5,5,6,6,7,7,7-undecafluoro-1-heptene (9CI)
                                                           (CA INDEX NAME)
     CM
          1
     CRN
         84100-13-0
         C7 H3 F11
     CMF
H_2C = CH - (CF_2)_4 - CF_3
```

CM 2

CRN 70780-97-1 CMF Unspecified CCI PMS, MAN

## STRUCTURE DIAGRAM IS NOT AVAILABLE

CM 3

CRN 25291-17-2 CMF C8 H3 F13

$$H_2C = CH - (CF_2)_5 - CF_3$$

CM 4

CRN 19430-93-4 CMF C6 H3 F9

$$H_2C = CH - (CF_2)_3 - CF_3$$

CM 5

CRN 17832-28-9 CMF C6 H12 O2

$$H_2C = CH - O - (CH_2)_4 - OH$$

CM 6

CRN 3377-92-2 CMF C7 H12 O2